

THE LARVA OF *MICRONASPIS FLORIDANA* GREENBy F. A. McDERMOTT¹

A new species of lampyrid firefly, *Micronaspis floridana* Green (1948), was described from Florida. In June 1953, Dr. Henry Field, of Coconut Grove, Fla., sent the writer specimens of an adult lampyrid, which were identified by Mr. Green as *Micronaspis floridana* Green, together with some black glowworms 5 to 10 mm. long. These larvae differed from the common *Photinus* larvae in that they appeared to have four rows of dorsal tubercles, somewhat as described for *Jamphotus tuberculatus* Barber (1941) and for an unidentified lampyrid larva by McDermott (1953). In September several living larvae of the same type were obtained, and an attempt made to rear them, using local garden soil and turf in a small glass jar. They readily attacked small bits of raw beef, partially liquefying it as usual with glowworms, but did not eat the same meat when cooked. One of two small earthworms put in the jar disappeared and was presumably eaten, but a small slug and a small snail were not attacked, nor was soft cheese eaten. Feeding was mainly at night; during the day the larvae crawled under the small pieces of aluminum foil on which food was placed.

After a few weeks it was noted that the larger larvae had burrowed into the soil for a depth of 1 or 2 cm., and had formed cells against the glass.² In spite of the dorsal structure these larvae apparently have no difficulty in burrowing in fairly loose soil. A few days later a yellow pupa was found in one of the cells, and still later another. Fourteen days after the first pupa was seen two adults were found in the jar, a female and a somewhat atypical male. The male was glowing feebly when found, but this soon ceased and thereafter it was not seen to give any light; the female was seen to give only one, very short faint flash. Neither sex could be stimulated to luminescence by a small flash-light. Later, two more small males, one defective, emerged. The last pupa died before eclosion. The larvae were rather rarely found giving light, but like our local *Photinus* and *Photuris* larvae, could be stimulated to give a slowly-fading glow by a slight jarring of the rearing vessel. The light of both larvae and adults was distinctly greenish.

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²The habit of forming pupation cells against the glass has been noted by the writer for *Photuris versicolor* (Fab.); however, all of the cells formed by *Micronaspis floridana* Green were not against the glass. Tilden (1953) has noted a similar behavior of chrysomelid larvae.

Pupae lie in the cell with the dorsum downwards, and are arcuate. In the freshly-formed pupa the abdominal segments are pinkish; later the whole pupa is yellow, darkening before emergence. One of the pupae was seen to be glowing faintly from the position of the larval organs, and another had a weak generalized glow. Only fragments of the cast skins were found.

One of the juvenile glowworms was found lying on its side, rubbing the anterior ventral segments with the end of the abdomen; the next day this specimen was dead, and was found to have been attacked by two pale mites, one on the femur of a middle leg and one toward the side of a ventral segment. The mites unfortunately became detached in alcohol and could not be found; when attached they were sack- or bottle-shaped, with relatively long proboscides; total length about 0.25 mm. Where the one had been attached to the femur a minute round hole was left in the chitin. None of the other larvae bore mites when examined.

DESCRIPTION OF THE MATURE LARVAE OF *Micronaspis floridana* GREEN:

Dimensions: Over-all length, apex of 9th abdominal segment to apex of prothoracic segment, 11 to 13 mm. Widest at the metathoracic segment, *ca.* 2.5 mm., tapering to *ca.* 1.0 mm. at the 8th abdominal segment. The mesothoracic segment is only slightly narrower than the metathoracic. The prothoracic segment is 1.5 mm. wide in the basal half, narrowing to a broadly rounded apex with a shallow median notch; it has a very narrow median longitudinal line, slightly channeled, and the lateral edges in the basal two-thirds are thickened and slightly reflexed.

Structure and Pigmentation: Dorsally each segment is provided with practically black sclerotized tergal plates, those on the prothoracic and 8th and 9th abdominal segments being single, while each of the other segments have two plates, approximate at the median posterior angles and dehiscent at the anterior angles. On the meso- and metathoracic segments these plates are nearly rectangular; on abdominal segments 1 to 7 they are roughly scutate. Their surface is very finely and evenly punctulate or granular. The plate on the prothoracic segment has two pale translucent areas in the apical and lateral thirds, and two smaller similar areas in the basal angles through which the pink underlying integument shows. Each plate on the abdominal segments bears on the posterior edge two large recurved hooks or projections, directed posteriorly, the inner ones forming two rows along the median third of the width, and the outer ones two lateral rows, thus giving the appearance of four rows of tubercles. At the top of the bend of these hooks is a small tubercle bearing a tapered white seta about 0.12-0.2 mm. long; 3 or 4 similar setae project from the lateral edges of the thoracic segments, and a few are present on the surface of the prothoracic segment. The postero-lateral angles of the plates on the thoracic segments are merely produced to dull points. The 9th abdominal segment has only the two postero-lateral points, and no hooks; there is a small brush of

caudal filaments. The underlying integument is pink from the prothoracic to at least the 7th or 8th abdominal segment.

Ventrally the surface is salmon-pink, except for two elliptical dark brown areas where the retractile head is sheathed in the prothoracic segment. Each abdominal segment has rather thick lateral folds, each bearing a pale tubercle with a long seta at the apex; one or two rows of smaller, usually setiferous tubercles are present on the lateral thirds of the abdominal segments, and the median thirds bear a sclerotized and lightly pigmented plate. The 8th abdominal segment bears the usual two elliptical ventro-lateral luminous organs. Juvenile larvae, 5 to 10 mm. long, are black dorsally, and pale with but little or no pink ventrally.

The head is *ca.* 0.9-1.0 mm. long from the apex of the prothoracic segment to the tips of the mandibles, and 0.5 mm. wide, rather flattened, and dorsally mainly black, but with basolateral white membranous areas and some white hairs. The mandibles are long, distally slender and sharp, and appear circularly curved when viewed from above, but are also curved upwards. The antennae are 3-segmented, angular, with the terminal article brown and spatulate, and bearing a few scattered hairs. A single ocellus at the base of each antenna. Maxillary palpi short and stout, almost club-shaped, and dark.

Legs pale yellow, tarsi 3-jointed, ending in a very slender, sharp claw; scattered pale hairs on the flattened femur.



FIG. 7. Dorsal View of the Larva of *Micronaspis floridana* Green.

Pupa: The arcuate yellow pupa became nearly straight in alcohol, and appeared to be tinged with pale greyish pink to the unaided eye, though still yellow under the microscope. It was 9.25 mm. long, and widest across the base of the pronotum, 2.7 mm.; the remaining segments tapered as in the larva. The pronotum was mainly yellow, and the meso- and metathorax salmon pink. The larval dorsal "hooks" were missing from the thoracic segments and replaced by low projections on abdominal segments 1 to 4; on segments 5 to 8 these projections became distinct tubercles, each with a stiff seta, but not hooked. All the abdominal segments have similar tubercles at the posterolateral angles, but again these are not bent or hooked. Ventrally, abdominal segments 2 to 7 have lateral tubercles with setae, similar to the larva, and encased lateral folds. Segment 8 bears the two larval luminous organs, but there was evidence of increased sub-integumentary density on segments 6 and 7. Encased mandibles, palpi, labrum, antennae, and legs were evident, and what is probably the aedeagus also. Eyes brown, reniform as viewed from below. Wing-pads yellow, elytrals tinged brownish.

My thanks are due to Dr. Field for the specimens, and to Mr. Green for identification and for the photograph.

LITERATURE CITED

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GENERAL REMARKS ON THE SUBFAMILY CLYTRINAE, AS SUGGESTED BY THE SECOND EDITION OF THE COLEOPTERORUM CATALOGUS (CHRYSOMELIDAE)

My manuscript on the CLYTRINAE for the second edition of Junk-Schenkling's Coleopterorum Catalogus has been sent to the editor and no doubt will be published in the near future. The present occasion seems appropriate to make some remarks on that chrysomelid subfamily which may be of interest.

Up to December 1953, 1377 species and subspecies of CLYTRINAE are listed, as against 942 in the first edition of 1913. This means an increase of 435 valid names (or 32% of the total number) in the last 40 years, at an average rate of approximately 10 species per year.

The number of genera has increased from 35 in 1913 to 38 in 1953. To date, sixteen authors have described clytrine genera or subgenera, four of whom have described over 75% of the total. The other 12 authors have described only a single genus each.

Author	No. valid genera and subgenera	No. genera and subgenera currently considered synonyms
Lacodaire	42	3
Chevrolat	10	3
Weise	6	—
Monrós	6	—
Others	12	5

All the infraspecific categories except subspecies are considered as synonyms of the respective species and such categories as "varietas," "aberratio," etc. are not employed as such. This increases the number of specific synonyms to 662, or about half as many as the names retained. In other words, one out of every three names used in the CLYTRINAE is merely a reminder of wasted time and energy, since the corresponding descriptions usually add little or nothing of value. The example of the CLYTRINAE, by no means exceptional among chrysomelids, may serve to recall that proper caution in naming and describing is a minimum request.

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